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11.74T

6.70mT

6.695mT

2.40T

10.0mT

0.74T

Plot of the magnetic field vector along the dissolution trajectory. The entire trajectory is 4.65m. x(m) is the distances along the trajectory and |B0|(T) is the absolute magnetic field values. The Polarizer has an absolute field value of 6.70T at its magnetic field centre. At the “hold position” for dissolution experiments, which is 10cm above the magnetic field centre, the field if 6.695T. This is in a flat region of the magnetic field profile. The magnetic tunnel has a simulated (COMSOL MULTIPHYSICS) magnetic field amplitude of 0.74T. The phase separator is located 27.5cm above the magnetic field centre of the 500 MHz magnet. The field at this region is 2.40T but is located along a sharp magnetic field gradient. The field at the magnetic sweet spot of the 500 MHz magnet is 11.74T. For this plot I have used the “on axis” plots of the magnetic field vector in the bore of each instrument. The “on axis” data was provided by Bruker.



Plots of x against Log|B0| are also included. The gridlines indicate the same locations and magnetic field strengths as before.



Above are plots of the magnetic field amplitude as one enters (left) and leaves (right) the magnetic tunnel. I have assumed a distances of 10cm between the edges of the magnetic tunnel and the top of the bore for each instrument. The magnetic field deviations at 1.81m and 3.66m are due to the “transition region” at the ends of the magnetic tunnel. This avoids a zero-crossing of the magnetic field vector. These transitions are adiabatic.